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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/749,025

12/30/2003

Alpaslan Demir

I-2-0536.1US

8271

24374

7590

02/08/2005

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EXAMINER

FERRIS, DERRICK W

ART UNIT

PAPER NUMBER

2663

DATE MAILED: 02/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/749,025

Applicant(s)

DEMIR ET AL.

Examiner

Derrick W. Ferris

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 October 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,4-11,14-21 and 24-48 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 31-46 is/are allowed.
- 6) ☒ Claim(s) 1, 4, 10, 11, 14, 20,21, 24, 30, 47, and 48 is/are rejected.
- 7) ☒ Claim(s) 5-9,15-19 and 25-29 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

1. **Claims 1, 4-11, 14-21 and 24-48** as amended are still in consideration for this application. Applicant has amended claims **1, 11, 21, 47, and 48**. Applicant has canceled claims **2, 3, 12, 13, 22, and 23**. Applicant has added no claims.
2. Examiner **withdraws** the obviousness rejection to *Malkemes* in view of *Cramer* for Office action filed **09/22/04**. To clarify the examiner's position, please see the new rejection(s) below as necessitated by amendment.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. **Claims 1, 4, 10, 11, 14 and 20** are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,741,867 B1 to *Tetsuya*.

As to **claim 1**, see prior art figures 7 and 8 of *Tetsuya* in reference to applicant's figure 1. In particular, applicant's LPF 108 is taught as FIR 23, applicant's LPF 110 is taught as FIR 24, applicant's pre-distortion compensation module 115 is taught as pre-distorter 25 and, applicant's controller 135 is taught as transmission power controller 34. A TPC signal is taught as power control information bit input 35 which is transmitted by the base station to the mobile. In particular, the signal is demodulated thus going through

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a modem, see e.g., columns 3-4 and in particular column 4, lines 40-47. As such, both the I and Q signals are also derived implicitly from the modem via terminals 21 and 22 (i.e., the time slots are parsed and further converted to real and imaginary parts). As such, pre-distorter 25 has real and imaginary signaling paths which are configured to receive and process respective real and imaginary signal components used to generate the wireless communication signal.

As to **claim 4**, see transmission power controller 34 in figure 7 which interfaces with the pre-distorter 25 and the power amplifier. As such, the power amplifier 29 is analog as taught by the D/A converter 26. The power amplifier further amplifies the signal as is known in the art and is further emitted over a wireless link as taught using antenna 33. The transmission power controller 35 controls the transmission of the digital pre-distortion compensation module and the PA based on the TPC signal generated by the BS (i.e., power control information bit input 35). The controller further includes a mapping unit which receives the TPC signal from the modem, the mapping unit being configured to output a first mapped TPC signal to the digital pre-distortion compensation module and a second mapped TPC signal to the TPC (i.e., note that the signals sent from transmission power controller are mapped or generated and are separate, same as applicant's).

As to **claim 10**, by adjusting the power amplifier 29, the PA does not operate in a non-linear fashion (i.e., the non-linear distortion is compensated), see e.g., column 4, lines 1-6.

As to **claim 11**, see similar rejection to claim 1.

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As to **claim 14**, see similar rejection to claim 4.

As to **claim 20**, see similar rejection to claim 10.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. **Claims 21, 24, 30, 47, and 48** are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,741,867 B1 to *Tetsuya* in view of “Power-Amplifier Module With Digital Adaptive Predistortion for Cellular Phones” to *Kusunoki et al.* (“*Kusunoki*”).

As to **claim 21**, see similar rejection to claim 1. *Tetsuya* may be silent or deficient to mentioning an IC.

Kusunoki teaches implementing different aspects of a radio receiver using an IC.

Thus the examiner proposes to modify *Tetsuya* to clarify that different parts of a radio are implemented using an IC.

Hence examiner notes that it would have been obvious to one skilled in the art prior to applicant's invention to implement functions of a radio using an IC. In particular, one skilled in the art would have been motivated to use an IC as a matter of design choice.

As to **claim 24**, see similar rejection to claim 4.

As to **claim 30**, see similar rejection to claim 10.

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As to **claim 47**, see similar rejection to claim 1. *Tetsuya* may be silent or deficient to adjusting the amplitude and phase of the power amplifier. In particular, *Tetsuya* teaches adjusting the amplifier gain.

Kusunoki teaches adjusting the amplitude and phase of the power amplifier.

Thus the examiner proposes to modify *Tetsuya* to clarify that it is well known in the art to adjust the amplitude and phase of a power amplifier.

Hence examiner notes that it would have been obvious to one skilled in the art prior to applicant's invention to teach the above limitation at issue. In particular, one skilled in the art would have been motivated to combine the references to teach the above limitation at issue in order to operate the PA in a non-linear fashion. As such, both *Kusunoki* and *Tetsuya* teach the above limitation, see e.g., left hand column on page 2980 with respect to AM/AM and AM/PM where AM is amplitude and PM is phase.

As to **claim 48**, see similar rejection to claim 47.

Allowable Subject Matter

7. **Claims 31-46** are allowed.
8. **Claims 5-9, 15-19, 25-29** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Derrick W. Ferris whose telephone number is (571) 272-3123. The examiner can normally be reached on M-F 9 A.M. - 4:30 P.M. E.S.T.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Ngo can be reached on (571)272-3139. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Derrick W. Ferris
Examiner
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DWE

A handwritten signature in black ink, appearing to be 'DWE'.A handwritten signature in black ink, appearing to be 'Chi Pham'.

CHI PHAM
SUPERVISORY PATENT EXAMINE
TECHNOLOGY CENTER 2800

2/4/05